



PATENT ABSTRACTS OF JAPAN

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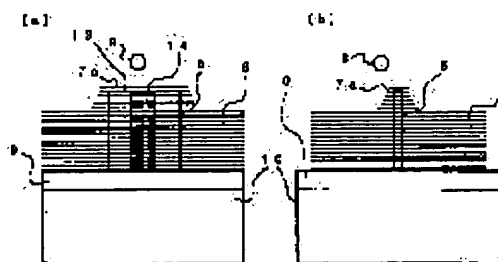
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(54) INK-JET RECORDING APPARATUS

(57)Abstract:

PROBLEM TO BE SOLVED: To prevent a nozzle from clogging and stabilize a discharge point of ink by providing an elastic member which vibrates correspondingly to the vibration of a vibration generation means and has higher hydrophilic properties at part of a surface area than at the other surface area, and generating capillary waves at a surface of ink by the vibration of the elastic member.

SOLUTION: A substrate is fixed to a supporting plate at a fulcrum to amplify vibrations, on which a vibrator 10 comprising a piezoelectric element and an electrode is formed. An elastic member 5 is incorporated on the vibrator 10. An ink feed hydrophilic area 14 is formed at the elastic member 5 by forming an oxide coat at a surface central part of one side in a breadthwise direction, and moreover increasing a surface roughness. A water-based ink 6 is filled in an ink-jet recording apparatus. A wave-like a.c. voltage is applied to the vibrator 10 from a voltage driving apparatus in accordance with pixel signals, thereby intermittently exciting, bending and vibrating the elastic member 5. In consequence, capillary waves are generated at a thin ink surface 7a present at a surface of a leading end part 13. Crests of waves are split with a vibration amplitude, whereby ink drops 8 are discharged.



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